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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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CANADA

EXAMINER

SCHATZ, CHRISTOPHER T

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/669,345	Applicant(s) WALKER ET AL.	
	Examiner CHRISTOPHER SCHATZ	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 8-10 and 17-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 11-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7 and 11-16 are rejected under 35 U.S.C. 102(b) as anticipated by Yamamoto et al.

As to claim 1, Yamamoto teaches a method comprising: positioning a first material 33 on a work surface 39 with an adhesion zone exposed and applying an anchoring adhesive 34' to the first material or second material or both to form a plurality of substantially isolated adhesive anchors separated by interstitial spaces (Figure 11; column 5, line 56 – column 6, line 33). After the adhesive anchors 34' have cured (column 11, lines 2-4) to form a plurality of physical and chemical bonding sites within the adhesion zone the reference teaches: applying a bonding adhesive 32 to the first material before the bonding adhesive has cured (column 6, lines 45-46), placing the second material into contact with the adhesive anchors and curing the bonding adhesive to bond the bonding adhesive to the adhesive anchors (column 10, line 52 - column 11, line 23; column 7, lines 25-55), whereby the adhesive anchors have a relatively higher degree of adhesion to the first material or to the second material or to both than the bonding adhesive, and the bonding adhesive intrudes into the interstitial

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spaces before curing and when cured bonds to the adhesive anchors (column 7, lines 25-55; column 5, lines 20-55; column 11, lines 24-30; column 15, lines 4-18; figure 11). The adhesive anchors have a relatively higher degree of adhesion to the first material than the degree of adhesion of the bonding adhesive to the first material because the anchoring adhesive is cured to the first material (see above cited text) and the bonding adhesive is not cured when first applied to the first material. The claim does not require that the anchoring adhesive have a relatively higher degree of adhesion to the first material than the degree of adhesion of the bonding material *after* the bonding material has cured.

As to claim 11, Yamamoto teaches a method comprising: positioning a first material 33 on a work surface 39 with an adhesion zone exposed and applying an anchoring adhesive 34' to the first material or second material or both to form a plurality of substantially isolated adhesive anchors separated by interstitial spaces (Figure 11; column 5, line 56 – column 6, line 33). After the adhesive anchors 34' have cured (column 11, lines 2-4) to form a plurality of physical and chemical bonding sites within the adhesion zone the reference teaches: applying a casting adhesive 32 to the first material before the casting adhesive has cured (column 6, lines 45-46), allowing the casting adhesive to cure whereby the adhesive anchors have a relatively higher degree of adhesion to the first material or to the second material or to both than the casting adhesive, and the casting adhesive intrudes into the interstitial spaces before curing and when cured bonds to the adhesive anchors (column 7, lines 25-55; column 5, lines

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20-55; column 11, lines 24-30; column 15, lines 4-18; figure 11; column 10, line 52 - column 11, line 23; column 7, lines 25-55).

As to claims 2 and 12, Yamamoto teaches such a claimed screen printing step (column 10, line 65 - column 11, line 7; column 16, lines 8-24). As to claims 3 and 13, the reference teaches the anchoring adhesive applied in a uniform pattern (figure 11). As to claims 4 and 14, Yamamoto teaches the claimed adhesive impervious portions. As to claims 6, 16, 5 and 15, the reference teaches that the anchoring adhesive is rigid (column 5, lines 1-26) and that the bonding adhesive is flexible (column 1, lines 13-14). Yamamoto also teaches the limitations of claim 7 (figure 11, column 15, lines 3-18)

3. Claims 1, 6, 11 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsumoto (US 4861387, newly cited).

As to claim 1, Matsumoto teaches a method comprising: positioning a first material 5 on a work surface 1a with an adhesion zone exposed and applying an anchoring adhesive 6 to the first material or second material or both to form a plurality of substantially isolated adhesive anchors separated by interstitial spaces (figures 2a-3; column 3, lines 35-46). After the adhesive anchors 6 have cured (column 3, lines 49-54) to form a plurality of physical and chemical bonding sites within the adhesion zone the reference teaches: applying a bonding adhesive 3 to the first material before the bonding adhesive has cured (column 3, lines 49-60), placing the second material 2 into contact with the adhesive anchors and curing the bonding adhesive to bond the bonding adhesive to the adhesive anchors (column 4, lines 7-17), whereby the adhesive anchors have a relatively higher degree of adhesion to the first material or to the second material

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or to both than the bonding adhesive, and the bonding adhesive intrudes into the interstitial spaces before curing and when cured bonds to the adhesive anchors (column 3, line 26 – column 4, line 25). As discussed above, the claim does not require that the anchoring adhesive have a relatively higher degree of adhesion to the first material than the degree of adhesion of the bonding material after the bonding material has cured.

As to claim 11, Matsumoto teaches a method comprising: positioning a first material 5 on a work surface 1a with an adhesion zone exposed and applying an anchoring adhesive 6 to the first material or second material or both to form a plurality of substantially isolated adhesive anchors separated by interstitial spaces (figures 2a-3; column 3, lines 35-46). After the adhesive anchors 6 have cured (column 3, lines 49-54) to form a plurality of physical and chemical bonding sites within the adhesion zone the reference teaches: applying a casting adhesive 3 to the first material before the casting adhesive has cured (column 3, lines 49-60), allowing the casting adhesive to cure whereby the adhesive anchors have a relatively higher degree of adhesion to the first material or to the second material or to both than the casting adhesive, and the casting adhesive intrudes into the interstitial spaces before curing and when cured bonds to the adhesive (column 3, line 26 – column 4, line 25).

As to claims 6 and 16, the adhesive anchoring adhesive is rigid.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-4 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto, as applied to claims 1 and 11 above, and further in view of Shiotsuka et al. (US 5973258, newly cited).

It is not clear if the adhesive anchors of Matsumoto are applied by screen printing. Shiotsuka discloses a method of making a solar device, and discloses that when applying patterned adhesive in the manufacturing process of such a device, it is well known and favorable to use screen printing (column 5, lines 60-66). At the time the invention was made it would have been obvious to one of ordinary skill in the art to modify the method of Matsumoto by screen printing the adhesive anchors as claimed by applicant because Shiotsuka teaches such a method of applying adhesive is a well-known and favorable method of applying adhesive patterns.

As to claims 3 and 13, the figures of Matsumoto disclose a method of applying a uniform pattern. As to claims 4 and 14, in order to form the pattern disclosed in figure 2b, the screen needs to have a grid of adhesive impervious portions.

6. Claims 5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto, as applied to claims 1 and 11 above, and further in view of Mori et al. (US 5660645, newly cited).

It is not clear if Matsumoto discloses a method wherein the bonding/casting adhesive is flexible. Mori et al. discloses a method of making a solar panel, and further discloses that when using an adhesive to make a panel, it is favorable for the adhesive

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to be flexible because such an adhesive tolerates large changes in temperature and pressure (column 5, lines 52-57). At the time the invention was made it would have been obvious to one of ordinary skill in the art to modify the method of Matsumoto by using a flexible adhesive as the bonding/casting adhesive as taught by Mori above as doing such increases increasing the panel's tolerance to large changes in temperature and pressure.

Response to Arguments

7. Applicant's arguments filed 04/09/2009 have been fully considered but they are not persuasive.

The applicant argues that the layer 39 is not a work surface because the layer is too thin and not strong enough to function as a work surface. This argument is not commensurate with the scope of the applicant's claims. The term "work surface" does not exclude any material or thickness. Additionally, the claim does not require that the anchoring adhesive be applied to the first material while the first material is on the work surface. The claim does not require that step be (b) performed after step (a). The applicant states that 39 is only a cover and does not support the layers. Figure 11 clearly shows that the bottom layer 39 supports the layers. As to claim 7, the layer 38 is placed on the bottom surface (or the work surface) of the top layer 39.

The applicant states that the Yamamoto's conductive bumps do not have physical or chemical bonding sites. Any adhesive material has physical or chemical bonding sites. A physical bonding site can simply be a surface of an adhesive. The applicant presents no definition in the specification, or a recitation of limitation in the

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claim that requires a “physical bonding site” to be anything different than such. The applicant states that the conductive bumps have no adhesive properties. Column 4, lines 56-64 explicitly recites that the conductive bumps have a “binder component”. A substance with a binder component has adhesive properties. The ability of the bumps to penetrate through a resin layer does not exclude the bumps from having adhesive properties. This statement is disproved by Yamamoto’s disclosure in column 10, 66 – column 11, line 16). The reference discloses a conductive *thermosetting* adhesive paste that penetrates through the bonding adhesive. The applicant states that because the adhesive bumps 34 are comprised of copper, they cannot have bonding sites. The applicant is referred to Yamamoto's disclosure of a conductive adhesive paste that penetrates through the resin layer.

The applicant has misinterpreted the disclosure in column 7, lines 43-46. The reference is stating that the conductive adhesive bumps that have penetrated through the resin sheet (binding adhesive) are connected to the conductive metal foil. The conductive metal foil to which the adhesive bumps connected is the copper foil 33 (see figures 11, 12; column 14, lines 2-27). The work surface 39 is not integrated it is removed from the final board. The applicant should also note that column 7, lines 35-37 explicitly recite that the adhesive conductive bumps are bonded to the resin sheet (bonding adhesive).

The applicant’s arguments state that the reference fails to disclose that the anchoring adhesive has a relatively higher degree of adhesion to the first material than

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the degree of adhesion of the bonding adhesive to the first material are addressed in the discussion of claim 1 above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER SCHATZ whose telephone number is 571-272-6038. The examiner can normally be reached on Monday through Friday 9 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CHRISTOPHER SCHATZ/
Examiner, Art Unit 1791

/Richard Crispino/
Supervisory Patent Examiner, Art Unit 1791